CLAIMS

1. A wireless device in a wireless communication system, comprising:

a receiver unit operative to perform a power scan on a first list of radio frequency (RF) channels and provide received signal strength measurements for the RF channels in the first list, wherein the first list includes RF channels on which to search for a suitable cell from which communication service may be received, and wherein the first list includes fewer than all RF channels evaluated for cell selection; and

a controller operative to obtain a second list of at least one RF channel selected from among the RF channels in the first list, initiate processing of the at least one RF channel in the second list to find the suitable cell, and select the suitable cell, if found, as a new serving cell from which to receive service.

2. The device of claim 1, wherein the controller is operative to identify a cell that is better than a current serving cell and to initiate cell reselection to the better cell, and

wherein the power scan and the processing of the at least one RF channel in the second list are performed only if the cell reselection to the better cell fails.

3. The device of claim 1, wherein the controller is operative to determine that service can no longer be received from a current serving cell, obtain a list of candidate cells from which service may be obtained, and initiate cell reselection for the candidate cells, and

wherein the power scan and the processing of the at least one RF channel in the second list are performed only if the cell reselection to the candidate cells fails.

4. The device of claim 1, wherein the second list includes N RF channels in the first list with strongest received signal strength measurements, where $N > 1$, and wherein the N RF channels in the second list are processed in parallel to find the suitable cell.

5. The device of claim 4, wherein the controller is operative to, for each of the N RF channels, direct the receiver unit to acquire the RF channel, schedule decoding of a broadcast channel for the RF channel, and direct decoding of the broadcast channel for the RF channel at a scheduled time to determine whether the RF channel is for the suitable cell.

6. The device of claim 5, wherein the controller is further operative to terminate processing of the N RF channels in the second set upon finding the suitable cell.

7. The device of claim 1, wherein the wireless communication system is a Global System for Mobile Communications (GSM) system.

8. A method of performing cell reselection in a wireless communication system, comprising:

obtaining a first list of radio frequency (RF) channels on which to search for a suitable cell from which communication service may be received, wherein the first list includes fewer than all RF channels evaluated for cell selection;

performing a power scan to obtain received signal strength measurements for the RF channels in the first list;

obtaining a second list of at least one RF channel selected from among the RF channels in the first list;

processing the at least one RF channel in the second list to find the suitable cell; and

selecting the suitable cell, if found, as a new serving cell from which to receive service.

9. The method of claim 8, wherein the performing the power scan includes for each of the RF channels in the first set,

obtaining a sufficient number of received signal strength measurements for the RF channel, and computing an average of the received signal strength measurements for the RF channel.

10. The method of claim 8, further comprising:
identifying a cell that is better than a current serving cell;
performing cell reselection to the better cell; and
performing the obtaining a first list, performing a power scan, obtaining a second list, processing, and selecting if the cell reselection to the better cell fails.

11. The method of claim 8, further comprising:
determining that service can no longer be received from a current serving cell;
obtaining a list of candidate cells from which service may be obtained;
performing cell reselection for the candidate cells; and
performing the obtaining a first list, performing a power scan, obtaining a second list, processing, and selecting if the cell reselection to the candidate cells fails.

12. The method of claim 8, wherein the second list includes all of the RF channels in the first list.

13. The method of claim 8, wherein the second list includes N RF channels in the first list with strongest received signal strength measurements, where $N \geq 1$.

14. The method of claim 13, wherein $N > 1$, and wherein the N RF channels in the second list are processed in parallel to find the suitable cell.

15. The method of claim 14, wherein the processing includes
for each of the N RF channels
acquiring the RF channel,
scheduling decoding of a broadcast channel for the RF channel, and
decoding the broadcast channel for the RF channel at a scheduled time to determine whether the RF channel is from the suitable cell.

16. The method of claim 15, wherein the processing further includes

terminating the acquiring, scheduling, and decoding upon finding the suitable cell.

17. The method of claim 15, wherein the processing further includes

terminating the acquiring, scheduling, and decoding upon finding a most suitable cell with strongest received signal strength measurement among all suitable cells for the N RF channels.

18. The method of claim 8, further comprising:

if a suitable cell is not found, performing cell selection for all of the RF channels to be evaluated for cell selection.

19. The method of claim 8, wherein the wireless communication system is a Global System for Mobile Communications (GSM) system.

20. An apparatus in a wireless communication system, comprising:

means for obtaining a first list of radio frequency (RF) channels on which to search for a suitable cell from which communication service may be received, wherein the first list includes fewer than all RF channels evaluated for cell selection;

means for performing a power scan to obtain received signal strength measurements for the RF channels in the first list;

means for obtaining a second list of at least one RF channel selected from among the RF channels in the first list;

means for processing the at least one RF channel in the second list to find the suitable cell; and

means for selecting the suitable cell, if found, as a new serving cell from which to receive service.

21. A processor readable media for storing instructions operable in a wireless device to:

obtain a first list of radio frequency (RF) channels on which to search for a suitable cell from which communication service may be received, wherein the first list includes fewer than all RF channels evaluated for cell selection;

initiate a power scan to obtain received signal strength measurements for the RF channels in the first list;

obtain a second list of at least one RF channel selected from among the RF channels in the first list;

initiate processing the at least one RF channel in the second list to find the suitable cell; and

select the suitable cell, if found, as a new serving cell from which to receive service.

22. A wireless device in a Global System for Mobile Communications (GSM) system, comprising:

a receiver unit operative to perform a power scan for a first list of radio frequency (RF) channels to obtain received signal strength measurements for the RF channels in the first list, wherein the first list includes RF channels on which to search for a suitable cell from which communication service may be received, and wherein the first list includes fewer than all RF channels evaluated for cell selection; and

a controller operative to obtain a second list of N RF channels corresponding to N RF channels in the first list with strongest received signal strength measurements, where $N \geq 1$, initiate parallel decoding of the N RF channels in the second list to find the suitable cell, and select the suitable cell, if found, as a new serving cell from which to receive service.

23. A method of performing cell reselection in a Global System for Mobile Communications (GSM) system, comprising:

obtaining a first list of radio frequency (RF) channels on which to search for a suitable cell from which communication service may be received, wherein the first list includes fewer than all RF channels evaluated for cell selection;

performing a power scan to obtain received signal strength measurements for the RF channels in the first list;

obtaining a second list of N RF channels corresponding to N RF channels in the first list with strongest received signal strength measurements, where $N \geq 1$;

performing parallel decoding of the N RF channels in the second list to find the suitable cell; and

selecting the suitable cell, if found, as a new serving cell from which to receive service.

24. The method of claim 23, further comprising:

identifying a cell better than a current serving cell based on the received signal strength measurements;

performing cell reselection to the better cell; and

performing the obtaining a first list, performing a power scan, obtaining a second list, performing parallel decoding, and selecting the suitable cell if the cell reselection to the better cell fails.

25. The method of claim 24, wherein the first list includes RF channels from a BCCH allocation (BA) list for the current serving cell.

26. The method of claim 23, further comprising:

determining that service can no longer be obtained from a current serving cell;

obtaining a list of candidate cells from which service may be obtained, wherein the candidate cells are from a BCCH allocation (BA) list for the current serving cell;

performing cell reselection for the candidate cells; and

performing the obtaining a first list, performing a power scan, obtaining a second list, performing parallel decoding, and selecting the suitable cell if the cell reselection to the candidate cells fails.

27. The method of claim 26, wherein the first list includes RF channels from the BA list for the current serving cell.

28. The method of claim 27, wherein the first list excludes RF channels for the current serving cell.

29. The method of claim 23, wherein the parallel decoding includes

for each of the N RF channels,

acquiring a synchronization channel (SCH) for the RF channel,

scheduling decoding of a broadcast control channel (BCCH) for the RF channel if the SCH for the RF channel is acquired, and

decoding the BCCH of the RF channel at a scheduled time to determine whether the RF channel is for the suitable cell.

30. The method of claim 29, wherein the parallel decoding includes

terminating the acquiring, scheduling, and decoding upon finding a most suitable cell with strongest received signal strength measurement among all suitable cells for the N RF channels.

31. An apparatus in a Global System for Mobile Communications (GSM) system, comprising:

means for obtaining a first list of radio frequency (RF) channels on which to search for a suitable cell from which communication service may be received, wherein the first list includes fewer than all RF channels evaluated for cell selection;

means for performing a power scan to obtain received signal strength measurements for the RF channels in the first list;

means for obtaining a second list of N RF channels corresponding to N RF channels in the first list with strongest received signal strength measurements, where $N \geq 1$;

means for performing parallel decoding of the N RF channels in the second list to find the suitable cell; and

means for selecting the suitable cell as a new serving cell from which to receive service.